

3

delivery tube 20 which mates with the inlet end 30 of delivery path 16.

Above the connector 36 is a cam 44. Cam 44 has an exposed hexagonal socket 46 and rotates in a circular bore 48 in the body 6. At the other end of the cam 44 is a nose 50 which engages a flange 52 at the bottom end of the cylinder 12. As the cam 44 is manually rotated, by means of a hexagon key inserted in the bore 46, the nose 50 rotates and so urges the cylinder 12 downwards against the force of the spring 14, and hence also pulls the pressing die 4 downwards. It will be appreciated that when the cam 44 is rotated through 180 degrees, the nose 50 reaches the bottom of its travel, and the cam can be temporarily "locked" in this position, for example by a small flat provided on the nose 40 where it engages the flange 52.

In use, the feed head 2 is installed a press, and is connected to a parts feeder and control system via connector 40. Nuts 22 are fed from a parts feeder along delivery tube 20. The parts feeder is controlled by signals from sensors 24, 34 which indicate the presence of nuts in the delivery path 16. The press is sent a "ready" signal when a nut is detected by sensor 24.

In the event of a jam in the delivery path, or elsewhere in the system, the pressing die 4 can be actuated manually, by rotation of cam 44, to eject nuts from the delivery path 16. Also, if it is desired to operate the press without actuation of the feed head pressing die 4, the die 4 can be held in its lowered position by cam 20.

By locating the sensor 24 at the axial end of the delivery path 16, the feed head can be made narrow, as seen in FIG. 2. Thus multiple feed heads can be spaced close together.

What I claim is:

1. A feed head, comprising: a pressing station; and a delivery path along which nuts are fed to the pressing station in the feed head, the pressing station including a pressing die which is reciprocated transversely to the delivery path under the action of a press to fasten a nut to a sheet metal member, wherein means is provided to manually reciprocate the pressing die independently of the press.

2. A feed head as claimed in claim 1, wherein the means for reciprocating the die manually is a cam which bears on a surface coupled to the die, and is manually rotated to move the die against the force of a return spring.

3. A feed head as claimed in claim 2, wherein the cam is rotatable between a first stable position allowing normal operation of the pressing die, and a second stable position holding the die in a depressed position.

4. A feed head having a delivery path along which nuts are fed to a pressing station in the feed head, comprising a delivery tube connected to the delivery path for delivering

4

the nuts to the delivery path, and an electrical connector for connecting sensors in the feed head to external components, wherein the delivery tube and the electrical connector are integrated.

5. A feed head for installing nuts in a sheet metal member, the feed head comprising:

a pressing station at one end;

a delivery path leading to the pressing station and along which the nuts are fed to the pressing station,

the pressing station including a pressing die which is reciprocable transversely of the delivery path under the action of a press and a return spring to move a nut from the delivery path on to said sheet metal member and press the nut into engagement with the sheet metal member to fasten the nut thereto; and

a manually rotatable cam,

the cam being accessible from another end of the feed head distal of the pressing station and manually rotatable by means of a tool engageable with the cam by an operator,

the cam bearing on a surface coupled to the pressing die such that the rotation of the cam moves the pressing die against the force of the return spring thereby to manually reciprocate the pressing die.

6. A feed head, comprising:

a pressing station including a pressing die;

a delivery path including an inlet end and along which nuts are fed from the inlet end to the pressing station;

an electrically operated sensor for sensing the position of a nut in the feed head and a first electrical connector positioned on the feed head adjacent the delivery path inlet end for outputting signals from the sensor;

a delivery tube for delivering the nuts to the inlet end of the delivery path, an outlet end of the delivery tube being removably coupled to the inlet end of the delivery path; and

an electrical wiring for feeding electrical signals from the electrical connector to an external apparatus, the electrical wiring being terminated in a second electrical connector which is removably mateable with the first electrical connector,

wherein the delivery tube outlet end and the second electrical connector are integrated for an operator to simultaneously couple the delivery tube outlet and the second electrical connector with the delivery path inlet end and the first electrical connector respectively.

* * * * *